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10/076,880	02/13/2002	Yong Wang	13199B	8827
7590 03/16/2007 Frank Rosenberg P. O. Box 29230 San Francisco, CA 94129-0230			EXAMINER JOHNSON, EDWARD M	
			ART UNIT	PAPER NUMBER
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**MAILED**  
**MAR 16 2007**  
**GROUP 1700**

**MAILED**  
**MAR 19 2007**  
**GROUP 1700**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/076,880  
Filing Date: February 13, 2002  
Appellant(s): WANG ET AL.

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Frank Rosenberg  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 9/11/06 appealing from the Office action mailed 1/23/06.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

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The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,413,449	WIELAND	7-2002
4,177,219	FEINSTEIN	12-1979

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

A. Claims 1, 5-7, 9-15, 19-20, and 33-35 rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wieland et al. 6,413,449.

Regarding claim 1, Wieland '449 discloses a catalyst comprising palladium/zinc and zinc oxide deposited on a metal oxide (see abstract), wherein the catalyst has a hydrogen productivity of more than 20, and up to 60,  $\text{Nm}^3/\text{kg}_{\text{cat}}\cdot\text{h}$  (see column 5, lines 8-15), which would inherently encompass the claimed productivity, since the claimed ingredients and materials are also disclosed. The method of measuring such productivity is not considered to affect the productivity itself, which because of the foregoing reasons, is asserted to be an inherent property of the prior art.

When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in

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claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicant to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. In re Fitzgerald et al. 205 USPQ 594.

Regarding claims 5 and 6, Wieland '449 discloses dispersing support and zinc oxide, adding acidic palladium, and adding a base (see column 7, lines 5-13), followed by redispersion and coating with the catalyst material (see column 7, lines 22-24), wherein palladium and zinc that has passed into solution are precipitated together (see column 7, lines 37-40).

Regarding claim 7, Wieland '449 discloses oxide of aluminum, titanium, and zirconium (see abstract).

Regarding claim 9, Wieland '449 discloses palladium and zinc that has passed into solution are precipitated together (see column 7, lines 37-40).

Regarding claim 10, Wieland '449 discloses immersion in a solution of only zinc nitrate, (see column 10, lines 58-59).

Regarding claim 11, Wieland '449 discloses 768.5 g zinc nitrate in one liter of water, which is about 1M zinc.

Regarding claim 12, Wieland '449 discloses dispersing support and zinc oxide, adding acidic palladium, and adding a

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base (see column 7, lines 5-13), followed by redispersion and coating with the catalyst material (see column 7, lines 22-24).

Regarding claim 13, Wieland '449 discloses neutralizing the acid solution, which would require at least a neutral pH of 7 (see column 7, lines 11-12).

Regarding claim 14, Wieland '449 discloses calcining at 300-550 degrees C (see column 7, lines 25-28).

Regarding claims 15 and 33-35, Wieland '449 discloses depositing Pd as a solution (see Examples) and calcining at 300-550 degrees C (see column 7, lines 25-28), which overlaps Applicant's claimed range with sufficient specificity.

Regarding claims 19-20 and 26, Wieland discloses more than 20, and up to 60,  $\text{Nm}^3/\text{kg}_{\text{cat}}\cdot\text{h}$  (see column 5, lines 8-15), which would inherently be characterizable in different units of measurement.

Regarding claim 23 arranging on a surface shell about 250 microns thick (see Example 2).

B. Claims 8, 17-18, 21, 31-32 rejected under 35 U.S.C. 103(a) as being unpatentable over Wieland '449.

Wieland fails to disclose large pores.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use large pores in the support of Wieland because Wieland discloses pore volume

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impregnation (see Examples) and a specific surface area of 140 square meters per gram (see column 8, line 22), which would obviously, to one of ordinary skill, suggest large pores in order to achieve the discloses surface area.

Regarding claims 17-18 and 21, Wieland discloses 82.6% alumina and 11.6% ZnO.

Wieland fails to disclose 1-15% Pd.

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use 1-15% Pd because Wieland discloses 5.8% PdZn alloy, which would obviously, to one of ordinary skill, at least suggest an alloy thereof causing between 2% and 5% Pd to be present.

Regarding claim 31, Wieland fails to disclose the Pd depositing subsequent to the drying step.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to deposit the Pd after drying because Wieland specifically discloses that it is known to preliminarily coat the support with a pretreatment of zinc followed by drying (see column 3, lines 26-31), which would obviously, to one of ordinary skill, suggest pre-coating with zinc, drying, then depositing Pd.

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Regarding claim 32, Wieland '449 discloses calcining at 300-550 degrees C (see column 7, lines 25-28), which overlaps Applicant's claimed range.

C. Claims 16 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wieland '449 as applied to claims 15 and 21 above, and further in view of Feinstein et al. US 4,177,219.

Regarding claims 16 and 22, Wieland fails to disclose Ru.

Feinstein discloses 0.5% Ru (see Table III and claims 3 and 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the 0.5% Ru of Feinstein in the reforming catalyst of Wieland because Feinstein discloses his 0.5% Ru in a reforming catalyst (abstract, summary) for high scission activity of catalysts (see column 8, lines 20-22) and effective conversion and selectivity (see column 9, lines 35-43).

#### **(10) Response to Argument**

It is argued that the productivity value described in Wieland is provided... "volumetric productivity". This is not persuasive because Applicant's declaration uses different amounts of Pd for the prior art and claimed catalyst (see Applicant's declaration, Table 1), even though no particular amount of Pd is specified in the claimed product (see claim 1).



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Thus, the evidence of non-obviousness is not commensurate in scope with the claim.

It is argued that the Examiner has stated that the Declaration... specified in the claim. This is not persuasive for the reasons above. Applicant's declaration uses different amounts of Pd for the prior art and claimed catalyst (see Applicant's declaration, Table 1), even though no particular amount of Pd is claimed.

It is argued that the 132 declaration... claimed volumetric productivity. This is not persuasive for the reasons above.

It is argued that the basis for patentability is simple. This is not persuasive because no particular amount of Pd is claimed.

It is argued that claim 26 contains an additional limitation of specific activity. This is not persuasive because the evidence of non-obviousness is not commensurate in scope with the claim, since Applicant uses a different amount of Pd for the prior art (declaration, Table 1).

It is argued that the method of claim 5 is further patentable... comprising dissolved zinc. This is not persuasive because Applicant appears to admit that Wieland et al. discloses "adding a solution" and that they "dissolve a portion of zinc".

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It is argued that on page 11 of the Office Action... as the claimed 'adding'. This not persuasive because Applicant appears to admit that immersing in solution is disclosed, which is adding the solution.

It is argued that claim 9 recites that the zinc is completely dissolved in solution. This is not persuasive because Wieland '449 discloses palladium and zinc that has passed into solution are precipitated together (see column 7, lines 37-40), which would at least suggest completely passing into solution.

It is argued that claim 12 recites a step... any zinc solution. This is not persuasive because Wieland '449 discloses palladium and zinc that has passed into solution are precipitated together (see column 7, lines 37-40), which would at least suggest completely passing into solution.

It is argued that claims 32-34 recite that the catalyst... exceeding 400 °C. This is not persuasive because Applicant appears to admit that "broader ranges are mentioned", which include the claimed temperature.

It is argued that in the Official Communication mailed January 25, 2005... produced by calcining. This is not persuasive Wieland '449 discloses a catalyst comprising palladium/zinc and zinc oxide "deposited" on a metal oxide (see abstract) and

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because Pd is disclosed on a support, which would at least suggest depositing the Pd onto the support, as disclosed.

It is argued that in the example of Wieland... dried and calcined. This is not persuasive because Wieland '449 discloses a catalyst comprising palladium/zinc and zinc oxide deposited on a metal oxide (see abstract).

It is argued that Wieland does not suggest a step of depositing Pd... zinc-containing layer. This is not persuasive because Wieland '449 discloses a catalyst comprising palladium/zinc and zinc oxide deposited on a metal oxide (see abstract).

It is argued that the reforming of ethyl aromatics to xylenes... and carbon dioxide. This is not persuasive because it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both references are clearly related to the catalyst art and processes of making thereof. Applicant appears to merely point out that the references contain various differences as well, which by itself is not a showing of non-analogous art.

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It is argued that nor is Feinstein's process... inventor was concerned. This is not persuasive because Applicant appears to admit that both references relate to catalytic reforming.

It is argued that the Examiner is in error in stating... Ru into Wieland's catalyst. This is not persuasive because Feinstein further discloses effective conversion and selectivity (see column 9, lines 35-43) and the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

It is argued that the situation is similar with regard to conversion and selectivity. This is not persuasive because Applicant appears to admit that both references relate to catalytic reforming, to which both conversion and selectivity are important.


**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Edward M. Johnson

Primary Examiner

Conferees:

Stanley Silverman



Kathryn Gorgos

